MARINE REVIEW.

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A Strange Case of Stupidity.

A fair example of the manner in which the shipping business of the lakes is considered by officials high in authority in Washington has just been furnished in the order sent to Gen. Poe from the war department early in the week, calling for a suspension of business for three days in the St. Mary's Falls canal. When the circumstances are considered, a more stupid thing can hardly be imagined. Gen. Casey, chief of engineers, has on several occasions acted in a manner unfavorable to water transportation interests, but he certainly had nothing to do with this blunder. The newspaper dispatches do not say whether he was consulted or not, but no one will think for a moment that he was consulted. Acting Secretary Grant who has been trying for several weeks past to shirk the responsibility of a movement towards having the war department take charge of the Chicago river, and who has worried the vesselmen in that matter also, is the shining light in this canal closing order.

A suit is pending against the United States in which damages are claimed for an alleged infringement upon a patent in connection with the valves which regulate the flow of water into and out of the lock. In the office of the attorney general it was thought that a good plan would be to examine the valves, the result to be used as evidence. It is not strange that the legal gentlemen were not acquainted with the location of the valves below the canal lock, or the loss that would result from a suspension of business at this time in the most important canal in the world, so they laid the matter before the acting secretary of war and asked that an order be issued to have the lock closed for the purpose set forth. One of the newspaper dispatches tells the result: "The acting secretary agreed that it would be a good and proper thing to do. In the kindness of his heart he promptly fired off the order. He knows little of the importance of that great waterway and the prodigious loss and damage to the lake commerce that would be caused by closing it for three days at this time of year. After the order had gone out Gen. Casey, chief of engineers, went to the acting secretary and laid the facts before him. Then the temporary head of the war department, like Saul of Tarsus, 'saw a great light.' He concluded that it would be better to let the lawsuit wait a few months than to blockade hundreds of boats for days while the legal gentlemen were holding their inquest upon the valves. The order was countermanded. The examination of the valves has been postponed till a more convenient season, or, to be more specific, to the first week in December."

The amount involved in the litigation is only $500,000 but it did not occur to the acting secretary that the loss to lake interests in the three days of idleness would be far above that figure. It is such blundering as this in and out of the departments that tires vessel owners of a continual meddling and grind of laws concerning their business.

The Iron Ore Market.

In accordance with a feeling of improvement generally in the ore market the demand for stocks is more active and there is some talk of dividends that is decidedly encouraging, although prices of these securities are still very low. The Iron Cliffs Company has declared a dividend of $8 a share, payable on the 18th inst. This is not a Cleveland-Cliffs dividend, but is to be paid from earnings of the Iron Cliffs Company accumulated previous to the consolidation, just as the Cleveland company paid $1 a share a few days ago. Dividends from Chandler, Lake Angeline, Republic and Lake Superior are also talked of, but there is nothing official regarding them. These old companies will, of course, make money on this year's sale as they have in the past, and in many cases the prices at which it is said ore has been sold are altogether too low. Chandler, for instance, is said to have sold ore at $4.25. Although prices are not given out it is more than probable that the lowest figure on Chandler ore was $4.50 and that figure was made on a lot of 200,000 tons to the Illinois Steel Company The Chandler company made $380,000 last year and has sold all of its ore for this season. At the time of its annual meeting this season's product had not been sold, and this was given as one reason for the non-payment of a dividend, so that it would seem now that a sharing of profits ought to be near at hand. The company was carrying a large line of paper at the annual meeting time but it was of a gilt-edge kind.

THE LATE CAPT. W. B. MORLEY.

St. Mary's River Buoys.

P. M. Church of Sault Ste. Marie is again desirous of calling the attention of vessel masters to the notice issued by him regarding the St. Mary's river patrol. He says: "Having been awarded the contract for patrolling the river for the United States government and earnestly desiring to perform the best service possible, I would respectfully ask that you notify me, either by letter at the canal office, by telephone or verbally, of the absence or displacement of any buoy from its proper position in the channel. The captain of the patrol boat has been instructed by me that should he find any boat aground, to go to such boat and offer to carry any message or messenger to the nearest telephone station on the river, provided it does not interfere with the performance of his duty in caring for the buoys, and this without charge." Mr. Church has telephone connections at his ship chandlery and residence, the former No. 7 and the latter No. 4.

Death of Capt. W. B. Morley.

Capt. W. B. Morley, of Marine City, who died of paralysis of the throat among relatives in Rochester, N. Y., Monday, was one of the best known men on the lakes. He began shipbuilding business in Marine City in 1870, his first boat being the schooner C. H. Johnson. He has since built some of the best wooden steamers on the lakes, among them the St. Lawrence, Italia, Louisiana, Caledonia, New Orleans, Osborne, Macy, City of Traverse, Fairbank, Mary, Jarvis Lord and D. W. Powers. Capt. Morley was born in Pultneyville, Wayne county, N. Y. and was sixty-one years of age. A steamboat is now on the stocks at his Marine City yard.

The State Owns the Lake Front.

On May 21, 1891, the supreme court of the United States filed an opinion which bears upon the ownership of lake front. The opinion says that grants of the government for lands bordering on tide water only extend to high water mark, and that the title to the shore and lands under the water in front of lands so granted inures to the state within which they are situated, held in trust for public purposes of navigation and fisheries, and not being grantable to individuals by the United States. It continues to state that this land is under control of the state, subject to the regulations of Congress for navigation, and that the state may dispose of the usufruct of such lands for the erection of wharves, piers and other advantageous aids to commerce, the state ownership of the land being paramount. The court adds: "This right of the states to regulate and control the shores of tide waters and the lands under them is the same as that which is exercised by the crown in England. In this country the same rule has been extended to our great navigable lakes, which are treated as inland seas."

The Chicago Herald remarks on this decision as follows: If the utterances of the court touching the rights of riparian owners bordering on the great lakes shall be adhered to directly before them for adjudication, then do not the following conclusions appear to be logically deducible from the declared attitude of the court, to wit:

1. That the riparian owners along the lakes are absolutely bounded by highwater mark, as it existed at the time of the grant from the government.

2. That the title to the shore between high water mark and the lake, and the title to the bed of the lake itself, are vested in the state, as an incident to its sovereignty, subject to the public uses of navigation and commence and the paramount right of control as to commerce and navigation vested in the general government.

3. If the riparian owner is absolutely bounded by high water mark, and the title to the shore and bed of the lake is absolutely vested in the state, then it would seem to follow that the title to all structures imposed on the shore and bed of the lake, by artificial filling, at least, is vested absolutely in the state and not at all in the adjoining riparian owner.

4. That the riparian owner upon the great lakes has no right to fill in the lake in any manner in front of his shore high-water line, his boundary; and that if he do so fill, in the absence of a grant from the state, the title to the filled territory vests in the state by virtue of its ownership of the shore and bed of the lake. If this be the law, what becomes of the supposed riparian rights of the railroad companies?

McDougall's Pump.

Capt. Alex. McDougall has patented a pump which is said to be intended for pumping coal from the mines to tidewater at Puget Sound. This statement would seem ridiculous were it not known to lake men who have visited the Pacific coast that a great deal of coal in the sound neighborhood is small and is carried in water. Still, it is claimed that the mines nearest the shipping points are full 30 miles distant and a very powerful pump would be required for such service. McDougall got his idea from the pumps used in wrecking operations on the lakes.

The Cargo Record Breakers.

The E. C. Pope and W. H. Gilcher, two big steel boats that went into commission this spring, are breaking the cargo records. The Pope brought down a load of grain from Lake Superior on 14 feet 1 inch draft that was in weight within a few hundred bushels of being equal to 100,000 bushels of wheat, and she has just made the run from the Sault to Washburn on another trip up in 26 hours and 49 minutes. The Pope, if run to Escanaba at any time during the season, will in all probability take out 3,300 gross tons of ore, notwithstanding the low stage of water, and she will undoubtedly take as much wheat out of Chicago as the other big carriers have taken in corn. The Gilcher's cargo of 115,000 bushels on 15 feet 3 inches is not as large as she might load but it is larger than any load of grain ever floated on the lakes, although the draft of water last season was about a foot greater than at present.

More than 70 per cent. of the Business out of Chicago.

The lake carriers have been taking for three weeks past about 70 per cent. of all east-bound freight business out of Chicago. Since the opening of navigation the Chicago board of trade has included in its weekly statement of the east-bound freight movement figures showing that part of the business going by the lake. A comparison of the rail and lake movement for five weeks past printed below will prove surprising:

Week ending.	Lake shipments, tons.	Rail shipments, tons.
May 9	81,821	57,506
May 16	73,696	48,963
May 23	64,541	40,108
May 29	75,801	34,480
June 4	87,233	42,607
June 11	88,616	44,140
Total	471,708	267,804

The rail lines engaged in this east-bound traffic are the Grand Trunk, Michigan Central, Lake Shore, Pittsburgh, Fort Wayne & Chicago, Pan Handle, Erie, Baltimore & Ohio, Wabash and Nickel Plate. During a portion of this period of five weeks the lake movement was double that by rail, and the comparison is all the more favorable to water transportation when it is known that the lake business is all a through business and would be many times greater than the rail movement if such purely local shipments as lumber were counted. A similar comparison in the west-bound shipments would be interesting.

W. F. STREET, statistician of Superior, has an article in the current issue of Bradstreets, in which it is shown that deep water navigation is the greatest aid to commercial prosperity and is also the end of profitable railway transportation. A discussion of the census figures regarding population in fifty-eight cities in the United States, each of which exceeds 50,000, shows a phenominal growth in sea-coast and lake cities during the past thirty years.

Record of Speed and Big Cargoes.

[*Masters or owners are invited to report improvement on this list.*]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company, of Milwaukee, 3,322 gross, or 3,737 net tons from Escanaba. Lake Superior—E. C. Pope, Dry Dock Navigation Company, of Detroit, 2,648 gross, or 2,932 net tons from Ashland, light draft.

Grain: W. H. Gilcher, J. C. Gilchrist, of Cleveland, 115,000 bushels of corn, Chicago to Buffalo; America, M. M. Drake, of Buffalo, 111,507 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line, of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hours; Saranac, Lehigh Valley Line, of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	$100 00	$.....	$ 82 50
Champion Iron Company.....	25 00	.....	.....
Chandler Iron Company.....	25 00	37 00	39 00
Chicago and Minnesota Ore Company.....	100 00	.....	100 00
Jackson Iron Company.....	25 00	90 00	100 00
Lake Superior Iron Company.....	25 00	.....	53 50
Minnesota Iron Company.....	100 00	70 00	72 00
Pittsburg Lake Angeline Iron Co.....	25 00	.....	140 00
Republic Iron Company.....	25 00	27 50	28 50
Michigamme.....	25 00	.....	5 00

The Minnesota company has declared its annual 6 per cent. dividend and is increasing its working force. An addition of 150 men in the force is reported for the past week. At the Norrie and other big Lake Superior properties operations are more active than they have been for several months past, the tendency being toward a rush of work for the remainder of the season. This dividend of 6 per cent. on the Minnesota means, of course, a distribution of $480,000 as the capital is $14,000,000. As usual, the annual meeting of the Duluth & Iron Range Railway Company was held in conjunction with the meeting of the Minnesota company. The officers of the railway company elected for the ensuing year are: President, H. R. Bishop; chairman, H. H. Porter; directors, H. R. Bishop, H. H. Porter, R. P. Flower, Marshall Field, Benjamin Brewster, and C. P. Coffin.

The machinery is reported in and everything ready for mining and hoisting ore at the Buckeye mine on the western Mesaba range, but it is located 18 miles from a railroad. The Duluth & Winnipeg want the company to construct its own spur, but they haven't the means. They report a large stock pile ready for forwarding, but the ore is unclean. Capt. Griffin says: "We shall ship ore next season by some means or other, because the Ohio capitalists interested in the mine manufacture products which require 300,000 tons of ore a year, and it must be got there in some way or other." It looks as if the Ohio capitalists will have to build 18 miles of road and possibly docks, if they use that ore next year. As their shipping port will be Duluth, possibly that city will vote them a few hundreds of thousands in St Louis county bonds, which Ely, Tower and other towns can help liquidate. At present, the Buckeye appears lost in the woods.—Two Harbors Iron News.

At a recent meeting of the directors of the Dexter company it was decided that prospecting work in the way of Diamond drilling should be instituted at once. It is probable, also, that the shaft will be sunk 30 feet deeper than now. Should the drilling and sinking reveal nothing of importance, the abandonment of the mine will undoubtedly soon thereafter occur.—The East New York company has sold 20,000 tons of ore and is negotiating for the sale of 20,000 tons more. The product of this mine has improved over that of any former year, and is popular with consumers. The property is said to be looking well. Should the additional 20,000 tons be disposed of it will represent the product of this season.—Iron Ore.

Officers reelected by the Minnesota company are: H. R. Bishop, president: D. H. Bacon, vice-president; A. J. Patterson, secretary-treasurer; C. P. Coffin, assistant secretary-treasurer. On June 10 the Minnesota company had shipped 63,609 tons and the Chandler 41,141 tons, or 104,750 tons in all. On June 10 last year these two mines had shipped 213,227 tons. Even at this big loss in shipments, the Vermillion mines make a better showing than any of the other Lake Superior properties, and it is not probable that their 1891 shipments will be much behind those of 1890. The Minnesota's force of workmen is now about equal to that of a year ago.

On June 10 there had been shipped from the Lake Shore docks at Ashland only 99,665 gross tons of ore and from the Wisconsin Central docks 17,702 tons. The shipments of the different Gogebic mines were as follows: Carey 10,632 tons, Trezona 4,521, Germania 1,768, Mount Hope 4,577. Norrie 32,360, East Norrie 16,326, Pabst 25,465, Eureka 2,015, Sunday Lak 1,997, Ashland 1,853, Aurora 8,320,Colby-Tilden 2,215, Montreal south vein 3,193 and Palms 2,120.

Both bodies of the Michigan legislature have passed a bill repealing the specific tax on mining properties. The bill was passed unanimously and now awaits only the signature of the governor to make it a law. The specific tax was originated in the early history of the Lake Superior mining region. The mining companies will now pay only their proper portion of state and county taxes.

The Paint river mine has begun shipping ore to Milwaukee, which, together with the shipments to Chicago, will reach twenty-five cars daily. There is a stock pile of 6,000 tons but is not being drawn on just at present, all ore shipped being taken from underground to the cars.—Diamond Drill.

Chandler is shipping an average of 1,100 tons of ore a day. No. 2 shaft is being sunk from the sixth to seventh level. The third shaft is going down to the third level, the station at the second level being 16x12 feet and 50 feet long going north.

Fire at the Anvil mine, Gogebic range, in the shaft where a valuable discovery of ore was made recently, resulted in damages that will greatly reduce the output of the mine for the season.

At the Miller exploration near Iron River a 60-foot vein has been opened up. The working shaft is down about 175 feet.

Ore Must Move Very Fast.

Ashland's shipments of ore up to June 10 this season amounted to only 117,367 gross tons, against 536,690 tons on the corresponding date a year ago. On June 10 last year there had been shipped from all of the upper lake ports 1,976,208 gross tons. The railway companies are withholding information regarding shipments this year but it can be safely said that the output from all ports to June 10 did not exceed 450,000 tons. This is allowing for a smaller per centage of loss from Escanaba and Marquette, on account of the delay in sales of Gogebic ores, excepting the Norrie. Shipments of ore so far this season are, accordingly, not more than 22 per cent. of the output at the corresponding time a year ago. It certainly looks as though the delay in shipments has been too long drawn out.

First Trip to Gibraltar.

Mr. J. H. Wade's steel steam yacht, now well under way at the yard of the Cleveland Ship Building Company, will have the most complete equipment of machinery ever seen on the lakes. The boat will have ten men in her engine department, a chief engineer and two assistants, two greasers, three stokers and two coal passers. She will leave for the Mediterranian about Aug. 1. Mr. Wade would cross the Atlantic in the yacht but his family will in all probability accompany him and it will be necessary to take one of the big line boats, joining the yacht probably at Gibraltar. It will readily be seen that the cost of running this boat will be greater than the regular expenses of the big lake freight boats.

Work on the New Ore Docks.

Escanaba's new ore docks, begun by the Schlesinger mining interests but now controlled by the Northwestern railway, contain 132 pockets and have a capacity of about 40,000 tons. Between 5,000,000 and 6,000,000 feet of lumber was used in the work. The construction of these docks, as well as the ore receiving docks at Ashtabula, was delayed through Schlesinger's financial drawbacks. It is hardly expected that the Ashtabula docks will receive any ore this season.

The Freight Situation.

Eighty cents is the wild rate on ore from Ashland and Marquette and 55 cents the rate from Escanaba. The ore companies are still selling some ore and it is difficult to get at the aggregate of sales, but reliable estimates are in the neighborhood of 4.500,000 tons. A few season contracts to carry ore from Escanaba have been made within the week and one of them is reported by the shippers at 70 cents. It is said that in another case the rate made was 75 cents but this is not given out by either of the parties to the contract. These figures show an advance over some former contracts, as a large amount of ore had been covered at 65 cents. Notwithstanding the fact that there was approximately 2,400,000 tons of ore on Lake Erie docks when navigation opened this spring, the surplus has been more than discounted by the delay on account of the strike of dock laborers. At this time last year there had been brought down approximately 2,000,000 tons of ore. Add to this 900,000 tons on dock at the opening in 1890 and there was a total of 2,900,000 tons on June 15, 1890, as against 2,400,000 tons on dock at the opening in 1891, with an addition of only 450,000 tons brought down to June 15, 1891, or a total of 2,850,000 tons. This means that the docks are now practically in the same condition they were in 1890, with the supply of pig iron well cleaned up and an iron market clearing itself. Another very important matter to consider, however, in conection with freights, is the increase in lake tonnage during the winter. This is partly met by a low stage of water and indications of a heavy movement in wheat.

Duluth is still wanting some tonnage for wheat, having about 2,500,000 bushels in store, and the rate has been raised to 2 cents. Lumber is not plentiful at the head of Lake Superior, but the rate to Buffalo and Chicago remains at $2. Freights on soft coal are unchanged on the basis of 60 cents to Chicago and Milwaukee and 50 cents to the head of Lake Superior.

An Eastern View of Side Launches.

A correspondent of the Engineering and Mining Journal, who attended the recent meeting of mining engineers in Clevelaud, writes in this way of the side launches peculiar to the lakes:

"A 3,000-ton iron ship, 289 feet long between perpendiculars, for carrying ore, was on the ways here, about ready to be launched. The method of launching the boats into the stream, which is but fifty or sixty yards in width, is unique. The ship is launched sideways and drops plump into the water off the skids, the latter tilting a little as she reaches their ends, which project but a few feet into the water beyond the bank. The superintendent says he would not return to end launching under any circumstances, as by this method with the skids but twelve feet apart, the ship is sustained on many more points of support than by the former method until the moment of entering the water. The resistance of the water against the side prevents excessive tipping, and after a roll or two the boat lies perfectly quiet."

A New English Boiler.

"It is the opinion of many engineers," says Industries of London, "that not much additional progress will be made in marine engineering until a decided advance has been made in the design of the steam generator. A new boiler, the invention of Mr. H. B. Buckland, of the Hamburg Chambers, Newcastle, and to which he has given the name of the "Stanley" boiler, was subjected to an experimental trial a few days ago, in the presence of a number of engineering experts. The boiler is spherical, the lower portion being reversed to form the crown of the furnace, the combustion chambers, three in number, taking away direct the greater part of the gaseous products and passing them through the upper tubes into the smoke boxes, and thence to the funnel. Large lower tubes are also provided in the lower portion of the boiler to take away part of the gases, which are returned through the ordinary tubes into the combustion chamber. The sides of the furnace and bottom are a distinct structure, so that the boiler has practically a "dry-bottom," the lower water spaces forming a feed-heater, any steam generated passing direct through piping to the steam dome or receiver. This arrangement is claimed to be very advantageous, as the sediment deposited in boilers is often mischievous in its action, and in the "Stanley" boiler, as all the feed-water is first passed into the lower structure or foundation of the boiler proper, no deposit is likely to be made in the latter, and it will be much more economical to renew the foundation portion of this boiler than to effect repairs to an ordinary marine boiler injured by overheating of plates, or by pitting, due to feed-water deposits. In any case, it is probable that the longevity of the main portion of the Stanley boiler will exceed that of the present type of marine boilers."

Cleveland Matters.

The light-house board gives notice that there will be displayed from the fog signal building at the Cleveland breakwater light station, for the information of the life saving crew in case of wrecks near the breakwater, a red light at night and a white flag in the day time.

The Straightaway, a steel steam yacht 94 feet long and having a cabin nearly her entire length, was launched a few days ago from the yard of the Cleveland Ship Building Company. The hull, which was rebuilt, was constructed by David Bell of Buffalo several years ago for Detroit parties but had never been used. Isaac Bearinger, East Saginaw lumber merchant, bought the hull and will soon have a good steam yacht.

The bridge accident at Cleveland, last week, through which one person was killed and several others badly injured was a very sad affair but it will probably be pronounced unadvoidable in court. The propeller Queen of the West, Capt. Benjamin Chambers was proceeding up the river and was given a signal by the tenders of the Columbus street bridge to pass through. After signaling the vessel the bridge tenders found it impossible to swing the bridge and a danger signal was immediately run up. It was too late to stop the boat, however, and the bridge and approach were shattered.

Books Received.

A second edition of the " Hand Book of American Republics," revised and enlarged has been sent out by the bureau established to furnish information of commercial interests on this continent. Persons who applied for the first volume and were not furnished with it can now be supplied with the revised volume.

A large and comprehensive lithograph map of the geological and natural history survey of the iron ore regions of Minnesota has been published by W. H. & H. V. Winchell, Minneapolis, Minn. It is a companion map to the book, "Iron Ores of Minnesota," recently published by the same parties.

The Wm. Powell Co., Cincinnati, present a neatly framed photograph of the cylinders of a triple expansion engine showing a signal oiler with four sight chambers. The Cleveland Ship Building Company is local agent for the oiler and they are receiving orders regularly. Engineers can send their address on a postal card to the Powell company, and if favored with a picture they will be well pleased.

A prospectus of the Coxheath Copper Mines, operated by the Eastern Development Company, Milk Street, Boston Mass, has been received. The mines are located near Sydney, Cape Breton, N. S, and the deposits are endorsed by eminent metallurgists and experts. Some stock can be purchased and if you are interested they will send you the prospectus.

There are 120 tank steamships now engaged in carrying oil in bulk from United States and Russian ports. An English shipbuilding firm has begun work on improved bulk craft which will carry oil from Philadelphia to Bombay and Calcutta, returning with jute and hemp.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., June 11.

Marine interests generally gave the excursion of the lake and rail line agents up Chicago river Tuesday a most generous support. Nearly every owner of floating property in Chicago was on board the Saranac, that afternoon. The committee labored under the disadvantage that all vessel owners could not be invited. The excursion was to convince the people of Chicago that the obstructions in the river should be removed. Vesselmen know this too well, and as the number who could be accommodated was limited, some of those whom it was necessary to convince of this great fact, were unfortunately excluded. The trip up the river was a revelation to most of the guests. It is said that comparatively few people born in London ever go to see the Tower, but an American in London goes there as a matter of course. The people in Chicago outside the marine interests who have taken a trip on the river you could count and not go beyond a hundred. A river trip with them was more strange than climbing Pike's Peak or a jaunt over the boulevards of Paris. It is to be hoped that having seen the obstructions to navigation, they will not be so averse to removing some of the difficulties under which the marine interests now labor. All credit should be given the lake and rail lines for their work in behalf of the lake marine. At the risk of being considered too forward they undertook the task of giving the excursion and of bearing the expense incurred. Several generous Chicago vesselmen came forward and gave sul stantial encouragement, but in the main it was the lines, which stood the burden. The Chicago agents gave their time and their full efforts to make it a success. The line managers, it is said, were as much interested as their Chicago agents, and backed up all that was done.

When this question is still open, it is in order to state that the Line Agents' Association seems to be in the best position to lead in the agitation for the removal of obstructions in Chicago river and the control of the river generally. Its members meet on 'change daily, and a full meeting can be called at five minutes notice. It is a small body of good timber for rapid work and persistent effort. It is withal both plucky and conservative. The interest of all the members of the association, so far aa the navigation of Chicago river goes, are identical. But if the line agents are to undertake the hard and bitter fight with prejudice and adverse interests in Chicago they need the cordial support of the whole lake marine. The Lake Carriers' Association can do some good in giving moral if not financial assistance to the movement. Other vessel owners' associations can do as much. When the lines—this means both managers and agents—undertook this great struggle, it was not for their own benefit alone. The owner of every boat entering Chicago river will be benefitted if success comes. Success is nearer at hand than it has been in twenty years. Capt. Marshall told a committee of vesselmen the other day that the river would never be improved until some body of men with power enough forced the city to do it. It is the aim of the Line Agents' Association to be that body. It is not impossible. By forcing the question, the present city administration will be compelled to do something or else flatly refuse to do it. This is a politicians' administration, and the great mass of marine men in Chicago cast too many votes to be heedlessly alienated. If the issues are pressed home there is little doubt that the marine interests will secure recognition.

The New Premier and the Rebate Question.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., June 18.—The announcement that Hon. J. C. Abbott has been called by the governor general to succeed Sir John Macdonald as premier and to form a new government has been approved of here by nearly all the conservatives except those engaged in the marine trade, and for this reason: As has been stated heretofore, the Montreal exchange is in favor of having a rebate made on the grain transhipped at Ogdensburg for Montreal; in other words that the former city be accorded all the privileges that Kingston has in so far as the refund is concerned. Sir John represented Kingston in parliament and therefore thus far we have had all the advantage. Mr. Abbott, the new premier, is a Montrealer and nearly all his interests are there, hence forwarders are anxious to know as to whether he will not assist the exchange and compel forwarders to build an elevator here if they want to hold the transhipping business at this port. On the other hand, it is claimed that he may, and it looks as if he will consider the matter from a national standpoint and leave Montreal out of it altogether. If he does this he will have to favor leaving the matter as it stands with Kingston getting the advantage. Otherwise his influence in the opposite direction would be weighty, and the exchange will use every means in its power to secure it. The result will be awaited with interest.

The whaleback steamer Colby and consort are still here. The former is getting her boiler repaired. It was the intention to send them back for another cargo before taking them to the Atlantic, but the decision has been changed. They will go on to the ocean as soon as possible, and will be taken down the rapids. If they get through successfully another whaleback which is now on its way here with 70,000 bushels of wheat will proceed to the ocean. As the Colby will be the first freight lake boat that will have made this attempt the trial is looked forward to with anxiety. The manager of the Colby arrived here Monday and will watch her attempt to go down the rapids.

The forwarding companies are doing a much better business than they expected at the outset. Thus far they have had all they can carry with comfort, but the rate is what annoys them. It is just one-quarter less than it was last year, which is quite a difference, when it is considered that wages have not been reduced the same as they have at American ports where a poor season was anticipated. There are now 500,000 bushels of grain on the way to Kingston and most of it will have arrived in a few days.

The steamer Rugee got fast on a shoal in the harbor for a few hours and had to be lightered before she would move. The harbor master has decided to get a sketch of the harbor printed and distribute copies freely among mariners. There is plenty of water if the proper channel is kept. These sketches will be found of great use.

Four locks in the Cornwall canal broke on Tuesday last but repairs were made without any serious detention. The new steamer North King made a trial trip a few days ago and was found to be very speedy. Her owner, C. F. Gildersleeve is very much pleased with her. The dry dock is still far from completion. The fact that the contractors, Connolly Brothers, are now before parliament in connection with a charge against the minister of public works is not hurrying the work any. It is claimed that the contractors received information from the department that aided them in tendering for other docks.

Grand Haven Notes.

Special Correspondence to the MARINE REVIEW.

GRAND HAVEN, Mich., June 18.—A large force of men is now at work on the pier extension at this port. Finch & Co., of this city, are driving the piles. Three cribs are ready to be put in place as soon as the piles are cut off under water.

Col. Duryea, superintendent of harbor improvements, has just completed a driver for doing the sheet-piling inside the harbor.

Duncan Robertson will commence building at his yard next week a towing and fishing tug for Milwaukee parties. The engine will be furnished by Bloecker & Co. and the boiler by Johnston Bros.

The propeller Ionia and the schooner Mary A. McGregor are among the latest boats to go into commission. Their owners have kept them in port but they are now ready to begin work.

Official Numbers and Tonnage.

The following numbers were assigned lake vessels by the bureau of navigation. W. W. Bates commissioner, for the week ending June 13: Sail—Harold, Port Huron, tonnage, gross 718.80, net 682.96 No. 96.114. Steam—A. D. Thomson, Buffalo, tonnage, gross 1,399.90, net 1,075.00, No. 106,834; Albert Wallace, Port Huron, tonnage gross 179.89, net 134.39, No. 106,838; C. W. Wetmore, tonnage, net 1,075.00, No. 126,745; E. B. Bartlett, Buffalo, tonnage, net 1,075.00, No. 136,205; Ida M., Detroit, tonnage, gross 14.39, net 7.20, No. 100,492; Major, Erie, tonnage, gross 147.19, net 110.55, No. 92.314.

A steam fog-signalling apparatus has been patented by Captain Thomas, of the s. s. Monte Rosa of South Shields. The machine gives certain signals to indicate the course a ship is steering during a fog. It is intended to be connected with the whistle of a steamer by means of a strong wire, and can be worked by steam from the main boilers. When the apparatus is set in action it gives the required blasts at intervals of about two minutes, and can be regulated at will. It does not require any futher attention, unless when the course of the vessel is changed. The change of signals, in the event of such an alteration, is effected by simply pressing in a small stop which indicates the course last steered, and drawing out another which gives the course about to be steered. The machine gives a signal for each fourth point of the compass, and no more than three blasts are given for each signal—thus two short and one long, two long and one short, one long and two short, one short and two long.

The Harlan & Hollingsworth Co. has contracted to build two duplicate steel propeller steamers, each 310 feet long, for the Providence and Stonington Steamship Company for services on Long Island sound. Both will be finished by May 1 next. They will cost in the neighborhood of $750,000 each.

Habitual divers in salt water often have inflamation of the eyes. The exposure such diving necessitates is not beneficial.

FROM END TO END. The entire length of the line, tickets will be sold at one fare for the round trip, July 2nd, 3rd and 4th, between any two stations on the Nickel Plate.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

HOMER J. CARR, - - - Associate Editor and Manager Chicago Office, 210 South Water Street.

Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.
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The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

Entered at Cleveland Post Office as Second-class Mail Matter.

THE work of the census bureau as regards the collection of statistics pertaining to lake commerce is probably at an end, and if it is not it would be better that it should be, as the whole tendency of census reports has been to underestimate the traffic. Another bulletin regarding the floating equipment was issued recently but it presented little of interest. In all its work so far the census office has attempted in connection with lake data, only one matter of importance, the tonnage movement, and in this a failure was made. Estimates, made up from unreliable custom house reports, were presented instead of facts which the census is supposed to contain. The MARINE REVIEW called attention to this and proved beyond the least doubt that the figures on the coal movement from Lake Erie ports were grossly incorrect. It is a question whether even these figures will be corrected in the revised reports or not. The whole difficulty in collecting the lake statistics was based upon the action of Mr. Henry C. Adams, special agent in charge of the division on transportation, who burdened the vessel owners at the outset with a demand for answers to an endless amount of questions that could not be answered in one case out of a hundred. After all concerned had become thoroughly indignant, Mr. C. H. Keep, secretary of the Lake Carriers' Association, was called in to finish the work and he did the best he could under the circumstances. This last bulletin shows that on Dec. 31, 1889, the lakes have, exclusive of fishing craft, 2,784 vessels of 924,472 gross tons and 780,119 net tons. These vessels are valued at only $48,809,750, notwithstanding the fact that Lloyds Inland Register, issued a few months later in the spring of 1890, contained the names of only 1,974 vessels and they were valued at $50,200,800. The census bulletin attempts to explain this away by saying that insurance valuations are excessive. It is well known to practical lake men that insurance valuations were not so excessive in the fall of 1889, a time when vessel property was very high, that such a difference should exist between the census figures and those contained in the insurance register. It is unfortunate that this incomplete data going into the census will be taken as a basis for important calculations in the future.

CONGRESS makes an annual appropriation in connection with the funds of the light-house department for the maintenance of river lights, and it would seem that a portion of this appropriation might well be applied to the connecting rivers of the lakes. Many thousands of dollars were spent on the Lime-Kiln cut, near the mouth of the Detroit river, but the vessel owners are compelled to pay for float lights marking the edge of this channel. It is certainly not an excuse to say that this cut is in Canadian territory when the United States government paid for the great work done upon it. Gen. Poe will recommend in his estimates for next year's work that $50,000 be appropriated for the purpose of clearing the Detroit river below Detroit of obstructions known to exist in different parts of this deep channel. With this work done the lower end of the river will be in excellent shape for deep navigation and it should be well lighted.

THE American Manufacturer of Pittsburgh issues a monthly statement of the condition of the blast furnaces of the United States. Its statement of June 1 is most encouraging to the mining and vessel interests of the lakes, as indicating a marked renewal of consumption. In the Pittsburgh district, where on the first of May thirteen furnaces were inactive, there was on June 1 only three, and the furnaces of the Mahoning and Chenango valleys, nearly all of which have been out of blast, are fast resuming operations. The statement also shows an increase of nine in the number of charcoal furnaces in blast.

To Again Push a Tunnel Bill.

A Detroit representative of lake vessel interests writing prominent members of the Cleveland Vessel Owners' Association says:

"As you know, notwithstanding the action of your vessel association and of the associations of Detroit, Milwaukee and Chicago, Senator McMillan, of this state, for his own personal reasons and in the exercise of a prerogative, which he termed 'senatorial courtesy,' prevented the senate committee on commerce from reporting the Detroit tunnel bill, and thus the matter was killed at the last session. Congress meets Dec. 1 and it seems to me that we ought to have a concerted action on the part of all the vessel associations of the lakes and the Detroit Tunnel Company in order to secure the immediate and early passage of the bill again by congress. The Michigan Central will be on hand at the beginning of the session to push its own private crossing of Detroit river by a high bridge and Senator McMillan will favor them. The question is, whether one United States senator and one railroad shall block the action of the Detroit company for a tunnel that will be open for all railroads; for the best interests of the vessel trade of the whole northwest and a final settlement of this bridge agitation. It seems to me we ought to have definite, practical action decided upon. Such action should be taken on the part of all the vessel associations of the lake cities and we ought to commence a settlement of this question at once. Our representative from this district in the house at Washington, who pushed our bill through the house unanimously at the last session, is confident that we can pass it through the house within a very few days of the commencement of the next meeting of congress. He is of the opinion that the house will be in no mood to permit this 'senatorial courtesy' to stand in the way of the unanimous action of that body."

Around the Lakes.

Buffalo's coal shipments last week aggregated 66,640 tons.

Sales of lumber to eastern parties are said to be quite active at Bay City.

R. V. Watkins, of Duluth, has purchased the tug Rambler for $5,500.

The schooner Bavaria has been sold at Kingston to Port Huron parties for $4,000.

Capt. E. H. Ferris, an old lake navigator, died at his residence in Chicago last week.

H. G. Trout rebuilt the engines of Niagara elevator, Buffalo, and the house is again in operation.

The steamer John W. Moore had 17,500 kegs of nails and 1,600 tons of coal on her last trip to the head of Lake Superior.

The propeller Alcona and consort Alba are on their way to Lake Superior with coal. These boats have just gone into commission.

The propeller J. C. Gilchrist with 75,000 bushels of grain aboard spent several hours of Saturday night on La Salle street tunnel, Chicago river.

The body of Capt. Clarke, of the Erie life saving crew, who was drowned while rendering assistance to the propeller Badger State, was found Saturday.

Chicago leaders in the Seaman's Union have established a branch office at Escanaba. Their aim is to fight the Cleveland Vessel Owners' Association.

The whaleback steamer Wetmore, now on her way to England with wheat, is commanded by Capt. Hastings, who took the barge J. L. Colby to the coast.

David Bell of Buffalo is building another steel tug for contractor Dunbar, of the same dimensions and power as the Spalpeen. She is already in frame.

There are now only four whalebacks on the stocks at West Superior, one of which is for the Standard Oil Company's trade on the Pacific. About 300 men are employed.

Capt. Murch, general manager of the Duluth-Superior Ferry Company, is said to have patented a style of ferry transfer which Buffalo shipbuilders are desirous of building.

Small schooners are carrying coal across Lake Ontario at 22 and 23 cents a ton. The rate on soft coal from Ashtabula and other Ohio ports to Lake Ontario is only 85 cents.

Instead of one ordinary tubular white light for the back light of the range at the upper entrance of the St. Mary's Falls canal, a red lens light of sixth power has been substituted.

The steamer Campana, one of the Lake Superior boats of the Canadian Pacific Company, built in Scotland, has begun service in the passenger and freight business between Kingston and Chicago.

Admiral Harmony, chairman of the light-house board, is aboard the light-house tender Marigold on Lake Superior. Other officials high in the service of the government might profit by a visit to the lakes. They would learn the importance of the traffic.

Lieut. Walker of the revenue marine service examined the crew of the propeller Badger State at Buffalo Tuesday, relative to the charges made by Capt. Dobbins the said crew offered no assistance to the life saving crew when Keeper Clark lost his life at Erie.

Dredges are still at work on the bar outside Ashtabula harbor. One vessel master, who succeeded in getting into port with a deep laden vessel, says that by keeping within 12 feet of the pier a channel 36 feet wide and having a clear depth of 18 feet will be found.

The Canadian steamer Campana's keel is set into the hull very deeply, a cross section of the hull resembling two boats joined together, with the keel projecting from the meeting place. The intention was to prevent her from rolling in cross seas. It was partially successful.

The Lake Michigan lumber trade is still very dull. Mills at Menominee and Muskegon are closing down for want of logs and there is a scarcity at Alpena and Cheboygan also. These districts have not been favored with a great deal of rain and logging operations are delayed.

The widow of Capt. Clark, the Erie life station keeper who was drowned while trying to render assistance to the crew and passengers of the stranded propeller Badger State, will not receive a pension. The rules of the service admit of a pension of only two year's pay at the most.

Horace L. Piper, acting general superintendent of the life saving service, has issued an order to keepers informing them that none but men who have passed the physical examination can be retained in the service and that special attention must be given to the matter without delay.

Probably the largest single amount ever paid into the Soo custom house for duty was handed over this week to Deputy Collector Carleton by the Dunbars, who paid $4,085 on a dredge and scow, which arrived here from Canada on Wednsday, to be used on their Hay Lake contract.—Free Press.

The Simmerly Derrick Company, of Cleveland, has recently sold to the Louisville, Ky., water works department one of its improved derricks, which is to be used in handling the large mains which the department is now laying. The works are being run night and day to meet the demand for derricks.

The T. T. Morford of Dunham's line is the largest of the Chicago tugs. She is commanded by Capt. Charles Roach, who has worked on sixty-two wrecked vessels and is said to have saved 126 lives. The oldest tug men in charge are Capt. Dunham and Capt. Elliott Learned. Both began tugging in 1855.

A new device for ventilating dining rooms located below the main deck has been adapted for the boats of the Detroit and Cleveland Steam Navigation Company. A system of tin piping with numerous valve openings is attached to the ceiling of the dining room and air is forced through from a fan of high speed.

The marine hospital service has made arrangements similar to previous years for the care of sick and disabled seamen. At Buffalo, Cleveland, Detroit and Chicago regular medical officers of the service will look after the assignment of patients to the hospitals as well as hospital attendance and other duties. In East Saginaw, Erie, Fairport, Ogdensburg, Oswego, Toledo and Ashtabula the medical attendance will be furnished by active assistant surgeons, provision having been made by contract for the hospital work.

"I am not much given to sentiment," said Capt. E. M. Peck, the other day (and everybody who knows the captain will bear witness to the truth of his statement), "but as I looked at the old schooner Racine to-day I could not help thinking what a wonderful change has been brought about since that craft was built. Just forty-seven years ago I was a deck-hand on her at the startling salary of $1.50 per day. The Racine was one of the largest schooners on the lakes in those days, and that fact, when you look at the boats that pass up and down the river nowadays, will illustrate what time can accomplish. There are very few, if any, boats on the lakes as old as the Racine, which was built in 1844." —Free Press.

Electricity for Ships' Auxiliary Machinery.

There is a decided tendency in the direction of applying electricity to the auxiliary machinery of vessels. Steamboat engineers are becoming conversant with electrical machinery. The Marine Engineer of London describes an electrical winch designed for light variable cargoes, the aim being to attain great rapidity of lift with simplicity. The motor, which runs at 1,000 revolutions, is of horizontal pattern, entirely enclosed in a stout casing, and having steel cased coils, such as those which have successfully stood the moisture and damp of underground mining work, and are now in use on numerous electrical launches. The makers are prepared to guarantee the working of the machine immersed in sea water.

All the steam windlasses, capstans and fixtures for cruisers 9 and 10 have been received by the Columbian Iron Works, Baltimore, from the American Ship Windlass Co., Providence, R. I. Capt. H. S. Taber, the United States engineer in Arkansas, speaks very highly of these windlasses, and says before he used the Providence steam capstans the boats were idle much of the time on account of breakdowns. H. St. L. Coppee, United States engineer, says the two Providence steam capstans furnished him last year are entirely satisfactory and doing good work. Capt. S. W. Roessler, United States engineer, has five Providence steam capstans that have outlasted the boats for which they were built and are still in good order and will be placed in new boats. This is loyal and practical testimony.

How a Screw Shaft was Patched Up.

The current issue of the Scientific American describes with illustrations the work of patching up the screw shaft of the Atlantic liner Veendam on her last voyage. An accident in mid-ocean resulted in the breaking of the shaft, the destruction of one of the bearings, and injury to the thrust block. The break in the shaft was a diagonal one 21 inches in length. The shaft is 16½ inches in diameter, 22½ feet long, and weighs about ten tons. When the break occurred, the continued motion of the part of the shaft adjoining the engine acted as a cam, pushing the other part of the shaft laterally, breaking the pillar block and two of the couplings, and straining the thrust block. The shaft was shored up, the broken bolts of the couplings replaced, and a device known as the Thompson coupler, carried in the vessel for such emergencies, was applied to the break. This coupling consists of a sleeve formed of three parts and having a bulge in the center for enclosing the ordinary flange coupling. These parts are provided with flanges having bolt holes in which are inserted heavy bolts for drawing them together and bringing the coupling into firm contact with the shaft. It required three days to apply the coupling. The engines were started up under slow speed, but at the end of seven hours, owing to the wabbling of the shaft, the point of the shaft broke off, eight of the coupling bolts gave out, and the coupler cracked. The engines were again stopped, and the coupling was re-enforced by heavy chains and wire-ropes. The chains and ropes were made as taunt as possible in wrapping them about the coupling. Wooden wedges driven between the chains and the coupling exerted a pressure upon the coupling which was sufficient to create the friction required to turn the screw.

In General.

Commander Gridley, U. S. N., of Buffalo, who is to be succeeded July 1 by Commander Woodward, has not yet been assigned to new duty.

The Craig Ship Building Company, of Toledo, has just launched a steel yacht 72 feet over all for Count Richburg of Middle Bass island.

The cut of the Babcock & Wilcox water tube marine boiler, published last week, was reproduced from Engineering, of London, one of the best engineering papers published.

The statement that the use of oil on the Erie canal boat Dimmers increased the vacuum to 18 pounds was an error. The size of the engine was 16x16, plain slide valve.

Eighty-nine dynamite cartridges containing 38 pounds each were exploded in removing the wrecks of the Ben Hur and M. E. Tremble from the St. Clair river. The Charlton Tug Company did the work.

There is no truth in the story that Capt. Wilson of Cleveland offered Capt. C. H. Weeks of Bay City, owner of the barge John Sherman $4,000 to settle his claim against the Olympia in the collision between the two.

The whaleback barge Colby has arrived at tidewater. She was run down the rapids without trouble. Commodore Morton of the Wilson fleet is now on the way to Montreal with the Wetmore, which cleared from Duluth to Liverpool.

When the schooner Monterey went ashore at Sleeping Bear point last fall her owners, Brady, Carpenter and others of Detroit, abandoned her to the insurance companies. Some time afterwards, when settling the insurance claims against them, the underwriters proposed to the former owners to pay $3,500 and return the boat to them. As the vessel was but slightly injured, the owners accepted the proposition and depended upon their chances of releasing her. An expedition was sent out to her last week and she was released. The wrecking bill was $1,300 The boat is in fair shape, and the expenditure of $1,000 will probably put her in her old trim again. As she was valued last year at $6,000 by Lloyds, it will seem that after all bills are paid the owners will be about $7,000 ahead on the transaction.

THE BEST BOOK OF REFERENCE FOR INLAND MARINE BUSINESS, AND THE BEST MARINE PAPER ONE YEAR, FOR $2.50. WRITE TO THE "MARINE REVIEW."

Wrecks and Heavy Losses.

The only accident of the past week resulting in a total loss was a collision between the harbor tugs American Eagle and Alva B. of Cleveland, whereby the former went to the bottom about one mile out from the harbor. The Eagle was owned by Capt. Dahlke of Cleveland, and was valued at $3,000.—Through stranding of the propeller Idaho, nine miles east of Ontonagon, Lake Superior, the Western Transit Company sustains another loss. It was necessary to send wrecking apparatus on a special train from Chicago and all of the boat's freight had to be taken out before she was released. The Japan, another of the lake Superior passenger boats grounded near Detour light but was released after lightering 100 tons of deck freight and jettisoning part of her fuel. The schooner Sheldon sustained considerable damage by going ashore on Lake Michigan, and the Canadian schooner Sligo will have a repair bill of about $500 to pay as the result of several hours on hard bottom at Outer Duck island, Georgian bay.

The number of boats finding bottom in the rivers and elsewhere on account of low water and thick weather is unusally large. The Bulgaria and consort Northwest on their way up with coal, spent a few hours on Poe's reef and the Waverly was ashore on Bois Blanc island. The Progress was held fourteen hours on the Canadian side of the St. Clair flats, and the Toledo and Northerner lost a like amount of time, the former on Fighting island and the latter on Grosse Pointe. The propeller Massassoit and schooners Homer and Ahira Cobb all found bottom near the Sault and the propeller Yakima towing two of the McDougall barges, was stranded above the Sault but all were released without much expense.

The Monterey and H. W. Sage, two schooners of medium size that have been on the beach since last fall, will soon be in commission again, Grummond's tug Champion released the Monterey from Sleeping Bear point. Lake Michigan, and she is now awaiting repairs at Port Huron. The ore cargo of the Sage, ashore at Hammond's bay, is being taken out and it is expected that she will be floated in a few days.

Affairs in Admiralty.

Judge Brown, of the district court, New York, decided an interesting salvage case recently. The steamship Tancarville, heavily laden, met with rough weather and her machinery broke down. She made sail but, owing to her deep lading, was unable to steer properly, made little progress and began to jettison her cargo The weather was fair, but the vessel was somewhat out of the track of steamers, and in a region especially liable to storms. The steamship Venezuela came up and, getting a hawser to the Tancarville, towed her into port without accident, difficulty or danger. The duration of the service was fifty hours and the detention of the Venezuela by reason of such service, twenty-four hours. The value of the Tancarville and her cargo was $87,432; of the Venezuela and cargo $630,000. The court held that the Venezuela should recover $800 salvage and $200 for damage to hawser.

The steamship Roanoke was off the Jersey coast, steering S. S. W. ½ W., on a clear moonlight night. She saw nearly ahead the green light of the brig Hyperion, which was sailing N. E. by N. with the wind one point free. The green light of the brig soon after shut in and her red light appeared, nearly ahead of the steamer, whereupon the steamer hard-a-ported and held the port helm until the collission. The vessels at the time the steamer ported were about half a mile apart. When the vessels were very near the green light of the brig re-appeared, whereupon the steamer stopped and backed, but was unable to avoid collision and the brig was sunk. Judge Brown, of New York, held on the evidence that the collision was due to the fault of the brig in changing her course when the vessels were very near and that the steamship was not liable for the collision.

Judge Simpson, of South Carolina, says the services of a stevedore in loading a vessel are maritime in their nature.

The Army and Navy Journal, issue of June 6, contains a most interesting review of the work since its establishment of the great shipbuilding plant of the William Cramp and Sons' Ship and Engine Building Company. Some excellent engravings accompany the article.

Steam Navigation.

1690. Denys Papin proposed to use his piston engine to drive paddle wheels to propel vessels.

1707. Papin applied his pumping engine to raise water to turn a water wheel, which in turn drove the paddle wheels of a boat. He drove a model boat in this way on the Fulda at Cassel. This was probably the first actual experiment in driving a boat by steam power.

1736. Jonathan Hulls took out an English patent for the use of a steam engine for propelling ships. There is no record of it having been carried into effect.

1752, Bernouilli obtained a prize from the French Academy of Science for the best essay on the manner of propelling vessels without wind. He proposed a set of vanes like those of a windmill (a screw propeller in fact) driven by either animal or steam power. He also proposed jet propulsion, or the driving of a vessel by the reaction of a jet forced out of her stern. About the same time Gautier proposed to use the Newcomen engine to drive paddle wheels.

1760. Genevois, a Swiss, proposed to compress springs by steam or other power, and apply their efforts to propel vessels.

1763. William Henry, of Lancaster, Pa., went to England in 1760, and there became acquainted with Watt's engine, which was then new. He returned to America, and in 1763 built an engine and put it in a boat fitted with paddle wheels on the Conestoga river. The boat sank on her trial. He built another, but nothing seems to have come of it. In 1783 he said to a German traveler: "I am doubtful whether such a machine will find favor with the public, as every one considers it impracticable against wind and tide." In 1777, Robert Fulton, then twelve years old, visited Henry to study the paintings of Benjamin West, who had long been a friend and protege of Henry, and there he probably got his first ideas of steam navigation.

1770 D'Auxiron, in France, prepared plans for adapting Watt's engine to propulsion, and in 1772 was granted the monopoly of the use of steam in river navigation in France for fifteen years, provided he should prove his plans practicable.

1774. D'Auxiron and his friends, Mounin and Jouffroy, built a boat which when near completion, sank at its wharf. D'Auxiron died before the boat was recovered and completed. After his death his monopoly was turned over to Jouffroy, who consulted Perier, a distinguished mechanic. The latter built the boat on new plans, and it was tried in the Seine, but failed to develop speed and Perier abandoned it.

1776. Jouffroy built a boat 14 feet long, and 6 feet wide, with a Watt engine and a chain carrying duck-foot paddles. The paddles proved unsatisfactory and he adopted a paddle wheel, driven by a ratchet wheel-motion by the piston rod of the engine.

1783. This boat of Jouffroy's was tried in public at Lyons, July 15th, 1783, and it is said to have been sucessful, but the French Government declined to confirm to Jouffroy the monopoly, on the ground that the experiment was not made at Paris. Jouffroy became discouraged and abandoned further attempts.

1784. James Rumsey, of Virginia, began experiments in steam navigation.

1786. Rumsey succeeded in driving a boat four miles an hour in the Potomas at Shepherdstown, W. Va., in the presence of General Washington. He used the system of jet propulsion which had been proposed about 30 years before by Bernouilli.

1787. Rumsey obtained a patent for the State of Virginia. He wrote a treatise on the application of steam, and organized a Rumsey Society at Philadelphia for the encouragement of steam navigation. He died in London in 1793 while explaining his scheme to a London society. A boat of his was tried in the Thames in 1793 and made four miles an hour.

1785. John Fitch, who was born at Windsor, Conn., in 1743 and died at Bardstown, Ky., in 1798, in April, 1785, conceived the idea of applying steam to locomotion on on land, and a few days afterwards was led to consider plans for applying steam to propulsion of vessels. In August he showed the model of his boat to Dr. Ewing, of the University of Pennsylvania, and in September presented a model to the American Philosophical Society at Philadelphia.

1786. Fitch made experiments on a skiff, with a three-inch engine, driving paddles; he besieged Congress and the Legislature of Pennslyvania for funds, but was unsuccessful; in the same year he was granted a patent for 14 years by the state of New Jersey.

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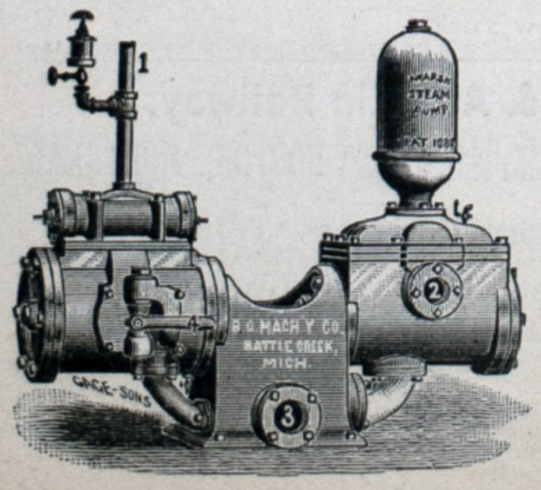

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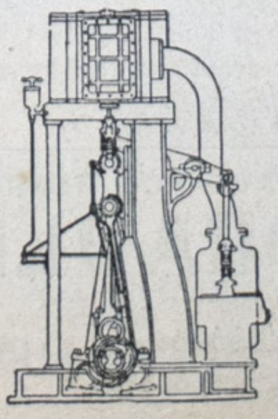

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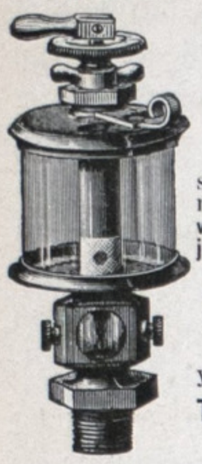

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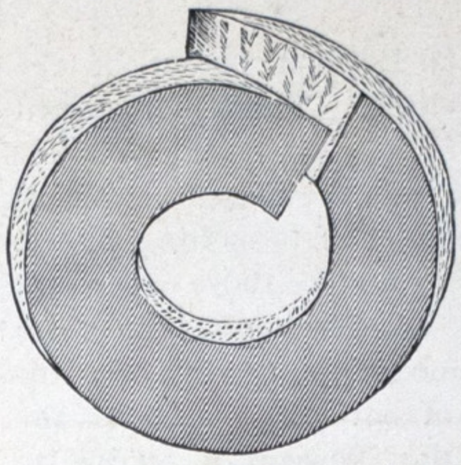

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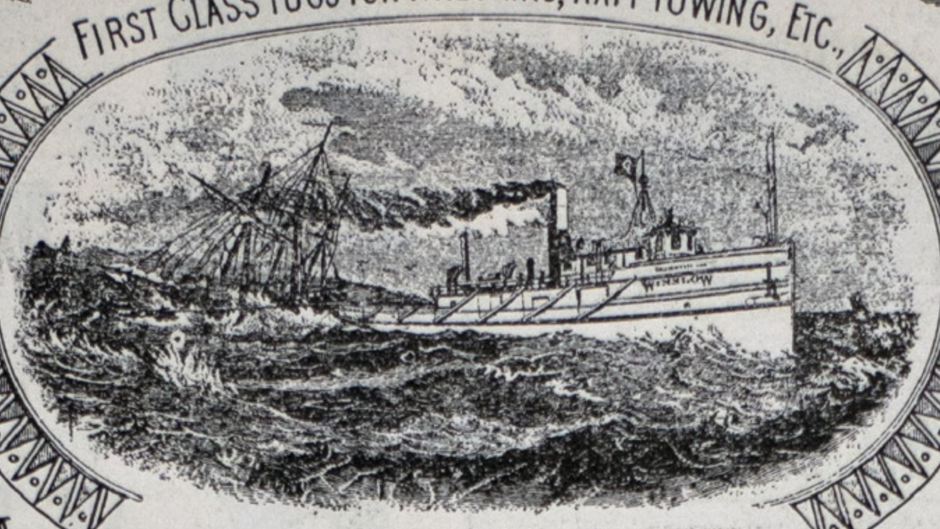

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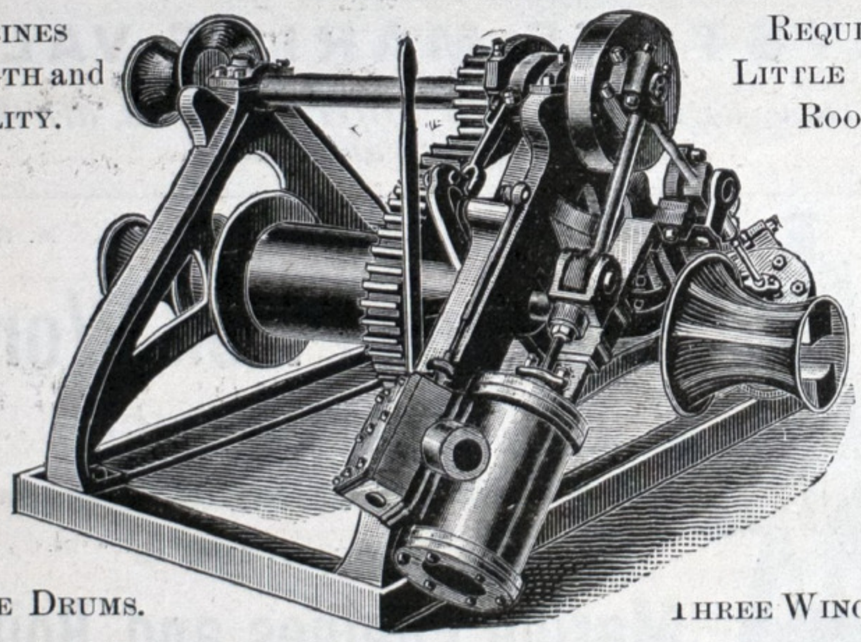

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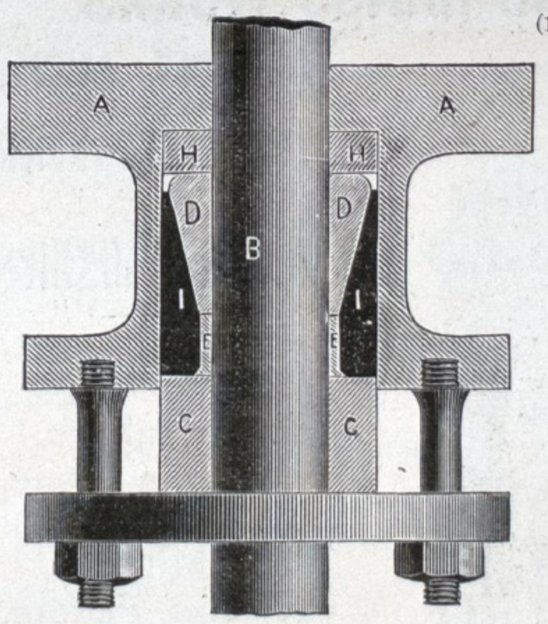

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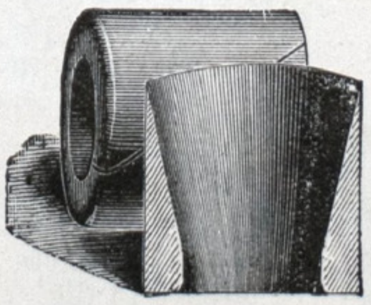

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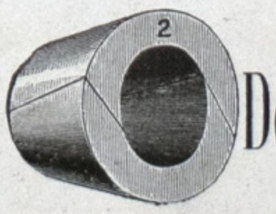

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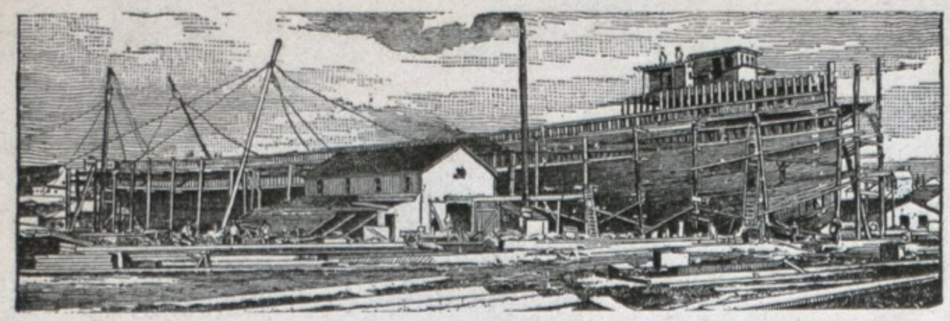

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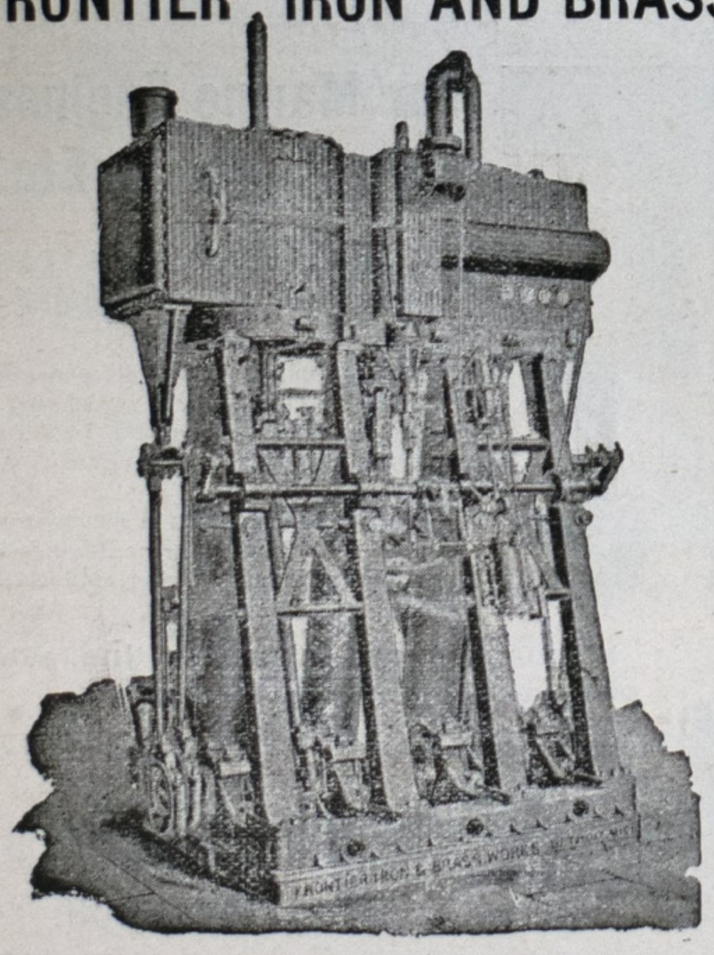

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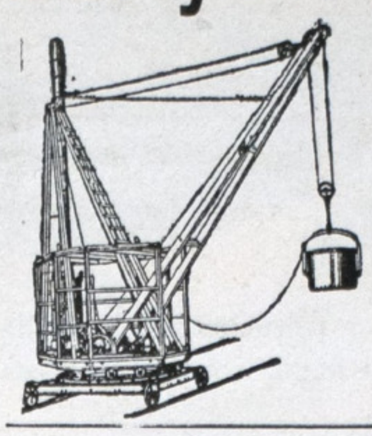

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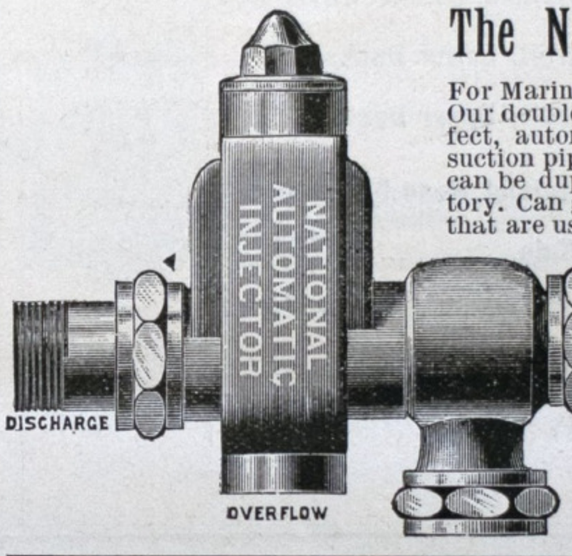

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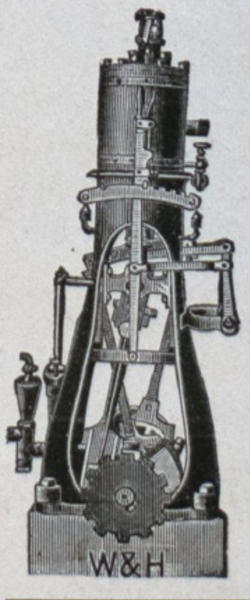

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